

## REMARKS

Claims 7, 11, 12 and 16-40 are active in this application. Support for the amendment to Claim 7 is found on page 6, lines 21-22. No new matter is added

Applicants again request that the method claims be rejoined upon finding that the elected product claims have been allowed (MPEP § 821.04).

The claims are directed to a pickle solution which contains at least one protein, at least one transglutaminase, an ammonium salt in an amount of from 0.001 mol/liter to less than 0.1 mol/liter and water. This pickle solution is not described in the prior art for the following reasons.

Susa and Soeda do not describe ammonium salt. Nowsad describe that amine salts such as ammonium salts in a concentration of 0.1 to 1.0 molar inhibit transglutaminase (see page 1017, column 1, first paragraph). In addition, Nowsad describe that "the breaking force and breaking strain showed a tendency of gradual decrease with the increase of the mole fraction of ammonium chloride and various amine salts added . . ." (Page 1018, column 2, , 4<sup>th</sup> paragraph, referencing Figure 1). However, the cited references fail to describe selecting a specific range of ammonium salt, i.e., 0.01 mol/liter to less than 0.1 mol/liter. Noswad simply does not describe any deviance from the disclosed range of ammonium salts nor provide any reason to do so.

As a result, the combination of prior art does not suggest that the claimed range of ammonium salt would be expected to have advantages for the pickle solution in which the salt had been added.

As described on page 6, lines 16-22, "When ammonium salt is used as the suppressing compound, if the concentration exceeds 0.2 mol/liter, the requisite TGase activity in the meat product is not attained. Therefore, when ammonium salts are used as the suppressing compound, the ammonium salt concentration is preferably below 0.1 mol/liter."

This statement is supported by the data shown in, for example, Tables 1-3 (see pages 10-12). Unfortunately, it appears the Office has misunderstood these data (referring to the discussion on page 3 of the Office Action. Therefore, the data are again reproduced and discussed below.

Table 1. Pickle solution

<b>Ingredients</b>	<b>Concentration (%)</b>
Soy bean protein for ham	4
Sodium casein	1.5
Egg white	2
Whey protein	1.5
Sodium chloride	4
Sodium nitrite	0.03
Polymerized phosphate (salt)	0.6
Ascorbic acid	0.2
Dextrin	7.5
Sugar	0.7
Glutamate Na	0.3
Water	77.67
Total	100

Table 2. TGase and TGase suppressing compounds in pickle solutions

<b>Experimental groups</b>	<b>TGase (U/liter)</b>	<b>NH<sub>4</sub>Cl (mol/liter)</b>	<b>Anserine (mol/liter)</b>	<b>Carnosine (mol/liter)</b>
(1)	0	0	-	-
(2)	50	0	-	-
(3)	100	0	-	-
(4)	150	0	-	-
(5)	200	0	-	-
(6)	200	0.002	-	-
(7)	200	0.02	-	-
(8)	200	0.2	-	-
(9)	200	-	0.2	-
(10)	200	-	-	0.2

Table 3. Pickle viscosity, physical properties and quality assessment of the model ham

Experimental groups	Pickle viscosity (cP) at 5°C				Breaking strength of the model ham (gram)	Quality assessment of the model ham*
	Immediately after preparation	one day later	2 days later	3 days later		
(1)	29	30	32	34	537	X
(2)	31	35	41	83	599	X
(3)	30	94	125	444	680	Δ
(4)	32	74	153	808	733	○
(5)	27	114	317	3855	773	○
(6)	26	52	110	312	770	○
(7)	31	44	66	95	752	○
(8)	30	31	36	45	686	Δ
(9)	31	41	58	87	722	○
(10)	31	42	56	90	734	○

\*: Effect of the TGase on firmness of the ham

X : insufficient;  
Δ : slightly insufficient; and  
○ : sufficient.

The pickle solution is shown in Table 1 and the amounts of transglutaminase (Tgase) and ammonium chloride (NH<sub>4</sub>CL) added to the pickle solution is shown in Table 2. This pickle solution was then added to meat to produce a ham (see page 11) and the quality of the ham was assessed, the results of which are presented in Table 3.

The data show that when the ammonium salt is in an amount of 0.2 (experimental group (8)) the breaking strength of the model ham and quality assessment of the model ham were significantly lower compared to ham prepared with pickle solutions with ammonium salt lower than 0.1 mol/liter, i.e., 0.02 and 0.002 (see experimental groups 6 and 7).

Contrary to the Office's interpretation of these data, the data between Groups 4 and 5 relative to Groups 6 and 7 **do not** support a conclusion that the results are substantially

equivalent (referring to the discussion on page 3 of the Office Action). Note that no ammonium salt was added to the solution of Groups (4) and (5) (see Table 2 reproduced above). The absence of ammonium salt in these two groups yielded a pickle solution with significantly high viscosities, particular in comparison to the viscosity of the pickle solutions in Groups (6) and (7) (compare pickle viscosities in Table 3 reproduced above). As discussed on page 2, lines 22-24 of the specification: "This increase in viscosity makes subsequent use of the pickle difficult and if the method of producing the meat involves injection, makes the procedure almost impossible to conduct."

In light of the above, the present claims would not have been obvious in view of Susa or Soeda in view of Nowasad. Therefore, withdrawal of the rejection under 35 U.S.C. § 103(a) is requested.

Applicants also note that in the Advisory Action, the Examiner has indicated that that Claims 23, 29, and 35 raise a new issue under 35 U.S.C. §112 because these claims still recite "to 0.1 mol/liter." Accordingly, the Examiner states that these claims do not further limit the claims from which they depend. In the amendment presented herein, Applicants have amended Claims 23, 29, and 35 to recite "to less than 0.1 mol/liter." Therefore, it is believed that this amendment obviates any new rejection under 35 U.S.C. §112.

Applicants submit that the present application is now in condition for allowance. Early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Norman F. Oblon  
Attorney of Record  
Registration No. 24,618

Vincent K. Shier, Ph.D.  
Registration No. 50,552



22850

(703) 413-3000

Fax #: (703)413-2220

NFO/VKS